Remarks / Arguments

The non-final Office Action of June 2, 2005, has been carefully reviewed and these remarks are responsive thereto. The title has been amended to more clearly describe the invention. Claims 1-3, 8, 10-11, and 17-20 have been amended, claims 21-25 have been added, and no claims have been cancelled. Claims 1-25 thus remain pending in this application. Reconsideration and allowance of the instant application are respectfully requested.

Amendments to the Title

The Office Action objects to the title as not being descriptive. Since Applicant has amended the title to make the title more descriptive, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 112

Claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended the second step of claim 1 to describe "transmitting network packets through a packet network interface over a packet network." As such, the subsequent instances of the phrase "the packet network" in step 3 are supported by sufficient antecedent basis. Applicant has also amended claim 8 to provide a sufficient antecedent basis to the phrase "the analog stereo audio data" in line 2. In light of these amendments, neither claim 1 nor claim 8 are indefinite.

Rejections Under 35 U.S.C. § 103

Claims 1-4, 9-11, and 13-19 are rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent No. 6,240,084 to Oran et al. ("Oran") in view of U.S. Patent No. 5,974,056 to Wilson et al. ("Wilson"). In order to reject a claim as obvious under § 103(a), the prior art reference(s) must teach or suggest all the claim features. *See* MPEP § 706.02 (j). Regarding claim 1, Applicant has amended the claim to recite a method comprising, "in the CPU,

scheduling delivery of the network packets to the packet network interface with other devices coupled to the packet network in such a way that congestion is avoided on the packet network." Neither Oran, nor Wilson, nor the proposed combination of the two, teaches or suggests a method of scheduling packet delivery to avoid network congestion. Oran merely teaches receiving data from different modules, packetizing that data, and routing it to a packet network (Voice / data router card 14 of Figures 2-3). As the Office Action correctly points out, Oran does not teach scheduling of network packets. Office Action, page 8. As further described in Oran, the CPU of the router card (CPU 42 of Figure 3) does not schedule packet transmission or take any steps to avoid congestion on the packet network.

Wilson describes a method to prevent multiple devices, all connected to a single bus, from simultaneously transmitting on the bus. Wilson, Abstract. Under Wilson, a "master station" sends out periodic synchronization signals to prevent packets collisions on the bus. However, this synchronization falls far short of *scheduling* network packets to avoid congestion. Wilson's master station uses the synchronization signal to create fixed-length time windows and then assigns these windows, in order, to the different devices connected to the bus. Wilson, Col. 8, lines 15-33. Thus, Wilson essentially performs the same functions as does a simple switch, such as a LAN switch. A LAN switch is a well-known device in the art, and would not be considered by one skilled in the art to be a "scheduler" of network packets. Wilson discloses no scheduling logic, and describes no interaction between the transmitter and receiver on the packet network to schedule packets for transmission. In fact, Wilson never uses the term "scheduling" to describe its transmission synchronizing behavior. Accordingly, Applicant submits that Wilson does not teach or suggest "scheduling," as recited in claim 1.

Wilson similarly fails to teach a method which avoids *congestion* on the network. Congestion is a well-known term of art, and a condition marked by delayed packet transmissions resulting from high network traffic. It is a distinct concept from the avoidance of packet collisions on the bus, as taught by Wilson. Wilson, Col. 3, line 33. Congestion typically manifests itself in overcrowded router queues and switches, which lead to transmission delays and dropped packets. In contrast, Wilson's architecture dictates that transmissions will never be

delayed. Wilson sends packets across only a single bus, and specifies that once a packet it placed on the bus it will immediately thereafter reach its destination. Since Wilson's architecture incorporates no network switches or routers, dropped packets and network delays are not problems that apply to Wilson's teachings. Indeed, Wilson does not reference the terms "congestion," "traffic," or any comparable term, and does not discuss routers or switches in any way. Thus, Wilson does not teach or suggest a method which "avoids congestion," as recited by claim 1.

Additionally, with respect to claim 1, Wilson fails to teach scheduling *on a packet network.* Wilson never uses the term "packet network," and instead consistently describes its transmission medium as a "bus." See, e.g., Wilson, Abstract. Wilson also describes its concept of packet transmission as follows:

> The individual stations can only transmit during their assigned time windows 21; it is, however, guaranteed that the stations 1 are ready to receive data packets sent over the bus 2, 2' without interruption, except when they are transmitting themselves.

Wilson, Col. 8, lines 18-22. Wilson further states:

> When a station is not sending data, then the time window 21 for that station is not utilized, and the following station—according to the assigned order—begins to transmit during the following time window 21, etc.

Wilson, Col. 8, lines 28-32. Based on these descriptions, the transmission medium in Wilson would not be described as a "packet network" to one skilled in the art. Transmission over a packet network, such as an Ethernet or other IP network, allows multiple devices to transmit at the same time, and a single device may transmit and receive packets over the network simultaneously. Thus, Wilson's invention applies only to transmission over a bus, rather than over a packet network. Since Wilson only uses a bus to transmit packets, the concepts of packet scheduling and congestion avoidance are inapplicable. Accordingly, Applicant submits that Wilson does not teach or suggest, "in the CPU, scheduling," so that "congestion is avoided on the network," as recited by amended claim 1. Applicant notes that this amendment merely clarifies the essence of the Applicant's invention, and is readily supported by the specification

and by previously filed application Ser. No. 10/697,103, entitled "Endpoint Packet Scheduling System" which is incorporated by reference into the Application. Therefore, Oran, Wilson, or the proposed combination of the two, does not teach or suggest, "in the CPU, scheduling delivery of the network packets to the packet network interface with other devices coupled to the packet network in such a way that congestion is avoided on the packet network," as recited in claim 1. Accordingly, amended claim 1 is allowable under 35 U.S.C. § 103(a), over the proposed combination of Oran and Wilson. Claims 2-9, in view of their dependence on claim 1, are similarly allowable under 35 U.S.C. § 103(a).

With respect to claim 10, Applicant has similarly amended the claim to recite a device, "wherein the CPU schedules delivery of the network packets in such a way as to avoid congestion with other devices coupled to the packet network." As discussed above in relation to claim 1, Oran does not teach scheduling, and Wilson only discloses synchronization to avoid packet collisions. Wilson does not perform packet *scheduling* in such a way as to avoid *congestion* on the network. Further, Wilson's invention describes transmission over a bus and not a *packet network.* Thus, for the same reasons discussed above in relation to claim 1, amended claim 10 is allowable under 35 U.S.C. §103(a), over the proposed combination of Oran and Wilson. Claims 11-19, in view of their dependence on claim 10, are similarly allowable under 35 U.S.C. § 103(a).

Claims 5-8, 12, and 20 stand rejected over Oran in view of Wilson, and in further view of U.S. Patent Application No. 2004/0160340 to Thompson et al. ("Thompson"). With respect to independent claim 20, Applicant has similarly amended the claim to recite, "in the CPU, scheduling the network packets over the Ethernet LAN in such a way as to avoid congestion among network packets." As discussed above in relation to claim 1, Oran does not teach scheduling at all, and Wilson does not teach or suggest scheduling packets in such a way as to avoid network congestion. The attempted addition of Thompson, which does not disclose packet scheduling over a network, does not overcome these problems with Oran and Wilson. Thus, for the same reasons discussed above, claim 20 is allowable under 35 U.S.C. §103(a), over the proposed combination of Oran, Wilson, and Thompson.

With respect to claims 5-8 and 12, Thompson, like the proposed combination of Oran and Wilson fails to teach scheduling of packets over a packet network so as to avoid congestion on the network. The attempted addition of Thompson does not overcome the problems with Oran and Wilson, previously discussed in relation to claims 1 and 10. Accordingly, claims 5-8 and 12, in view of their dependence on claims 1 and 10, respectively, are allowable under 35 U.S.C. § 103(a), over the proposed combination of Oran, Wilson, and Thompson.

Additionally, in order to reject a claim as obvious under § 103(a), there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, and there must be a reasonable expectation of success. *See* MPEP § 706.02 (j); *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). With respect to claims 1-20, Applicant requests that the rejections of these claims be withdrawn, as they based on an improper combination of references. Independent claims 1, 10, and 20 all recite modules which present data to the CPU "over the backplane bus." Although the Office Action states that Oran teaches these steps, Oran only uses a TDM bus to route this data. Oran, Abstract. In fact, Oran explicitly teaches away from using a PC backplane bus to present data to the CPU:

> The TDM bus transfers telephony data between different network systems and the telephony endpoint cards independently of the host system and the host system backplane bus. The network endpoint is moved onto the same bus as the telephony endpoint cards, eliminating high-volume voice data transfers across a conventional shared PC backplane, such as an ISA or PCI bus.

Oran, Col. 1, lines 64-67; Col. 2, lines 1-3. As demonstrated here and throughout Oran, the goal and purpose of Oran's invention relies on ceasing to transmit telephony data over the PC backplane bus, and instead using an alternative TDM bus. Therefore, Applicant submits that transferring data signals from voice modules, video modules, or the like, over the backplane bus would not have been obvious. Accordingly, Applicant submits that independent claims 1, 10, 20 are patentable over Oran, Wilson, and Thompson. Claims 2-9 and 11-19, in view of their

dependence on claims 1 and 10, are similarly allowable under 35 U.S.C. § 103 over the combination of Oran, Wilson, and Thompson.

With respect to claims 2, 3, 9, 13, 16, and 20, Applicant similarly requests that the rejections of these claims be withdrawn, as they are based on an improper combination. Each of these claims recite either scheduling "Ethernet" packets, or scheduling packets "over an Ethernet." The Office Action alleges that Wilson teaches scheduling. Office Action, page 8. However, Wilson consistently teaches away from the use of an Ethernet and Ethernet packets. See, e.g., Wilson, Abstract. Wilson further describes:

> The preamble and the header are therefore considerably shorter in comparison with the Ethernet data packets shown in FIG. 3a.
>
> These Ethernet data packets comprise a preamble with a specified length of 8 bytes and a header with a specified length of 14 bytes. For the data which follow, between 46 and 1500 bytes are available, such that the entire frame has a length of between 68 and 1522 bytes. The Ethernet data packet shown in FIG. 3a comprises 8 bytes for the preamble as well as 13 bytes for the header and 1500 bytes for data.
>
> FIG. 3b shows the kind of data packet which is transmitted according to the invention, which shows 2 bytes for the preamble, also 2 bytes for the header, and 18 bytes for data.

Wilson, Col. 7, lines 10-15. The only mention of an Ethernet throughout Wilson is to distinguish Wilson's own synchronized bus method, the essence of the invention, from an Ethernet. Therefore, the use of an Ethernet with Wilson is not obvious, and conflicts with the essential purpose of Wilson. Accordingly, Applicant submits that claims 2, 3, 9, 13, 16, and 20 are patentable over Oran, Wilson, and Thompson.

New Claims

Applicant has added claims 21-25, supported by the specification as filed and by previously filed application Ser. No. 10/697,103, entitled "Endpoint Packet Scheduling System" which is incorporated by reference into the Application. No new matter has been added. As in independent claim 1, dependent claims 21-25 recite a method comprising, "in the CPU,

scheduling delivery of the network packets to the packet network interface with other devices coupled to the packet network in such a way that congestion is avoided on the packet network." As discussed above in relation to claim 1, Oran, Wilson, or the proposed combination of the two does not teach or suggest scheduling to avoid network congestion.

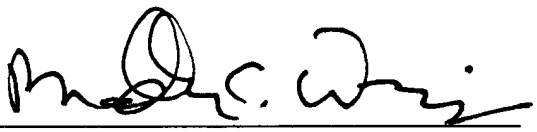
Claims 21-25 further recite details of some of the empirical scheduling methods disclosed in the Application. Application, pages 7-8. These methods require specific scheduling interactions between the transmitter node and receiver node, to schedule the transmission for one or more agreed upon time slots. Claim 21 recites a variation of a scheduling method comprising, "from a transmitting node, transmitting a proposed delivery schedule," and "receiving from the intended receiving node an indication as to whether the proposed delivery schedule is acceptable." Claim 22 recites another variation of a scheduling method comprising, "from a transmitting node, transmitting a query to an intended receiving node," and "receiving from the intended receiving node a reception map." Claim 23 recites yet another variation of a scheduling method comprising, "from a transmitting node, transmitting a bandwidth requirement to an intended receiving node," and "receiving from the intended receiving node an indication as to whether the proposed delivery schedule is acceptable." Claims 24 and 25 recite further details of generating a delivery schedule. These variations of scheduling methods are not taught or suggested by Wilson, Oran, or any combination of the cited references. Accordingly, the Applicant respectfully requests allowance new claims 21-25.

CONCLUSION

All rejections having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. Should the Examiner find that a telephonic or personal interview would expedite passage to issue of the present application, the Examiner is encouraged to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,
BANNER & WITCOFF, LTD.

Date: Nov. 7, 2005

By: 

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